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Powell-Sevier, National Forest, Utah.

Insect Infestation, season of 1923.

At the request of the District Forester the areas on the East Fork Rangers District were examined. This examination covered the period August 15, to 17, inclusive. Conditions have not changed since the examinations in September 1921, and August 1922. The infestation is still confined to the same general locality. There is no infestation of any importance north of the East Fork District. There is a noticeable increase in the number of infested trees on the East Fork compared with the number observed in 1921. As this increase may be due to a heavy concentration on some sections we can only state that there is no decrease in the number of trees infested in 1920, 1921 and 1922. The Black Hills Beetle (*Dendroctonus ponderosae* Hopk.) is still beneath the bark of the trees attacked in August or September of last year a few were observed to be bearing out.

It is unlikely that the main brood will emerge before August 25. The writer and Entomological Ranger George Hofer made a thorough examination of the areas from the sawmill on East Creek to the East Fork and for some distance up the East Fork above the Tropic Reservoir. Counts were made of the areas on East Creek and on the East Fork. The ground from the sawmill on East Creek to the East Fork was cruised. By walking through the timber and across the divide between the two Creeks, a fair estimate could be arrived at. Since the infestation of 1920, 80 trees per section is the annual loss on all areas outside of the East Fork. On the East Fork, both below and above the Tropic Reservoir about 6 sections, 500 trees per section is the annual loss from the attack of 1922. These trees are quite conspicuous as they are distinctly sorrel tops. This place is the heaviest infestation on the East Fork. This is considerably higher than the infestation of 1920, or the Red Tops trees observed in September 1921. The infestation of 1920 when viewed in September 1921 constituted the Red Tops from which the broods were emerging and attacking the green trees. When viewed in August 1922 these green trees were Sorrel Top, later becoming Red Top. In this examination of August 16, 1923 the sorrel top trees counted were those attacked by the broods emerging from the Red Top trees of 1922. It would appear that there was a decided increase in the infestation of the attack of 1922. there is no evidence to indicate a decline.

The mill located on East Creek will be in a position to salvage a considerable amount of Bug killed timber and possibly will cut quite a lot of the infested trees. If a mill could be located on the East Fork in the vicinity of the Tropic Reservoir at least 500,000 f.b.m. of Bug killed and infested timber could be cut. This would improve the situation and would, we are convinced reduce the infestation if carried on for a three year period. We can not recommend direct control work on the East Fork area as the surrounding areas for a distance of 5 or 6 miles contain scattering infestation which it will be quite impossible to handle except at prohibitive expense, not justified at the present time by the amount and volume of the green timber composing the stand. The areas in the vicinity of the Marshal sawmill in Red Canyon, show a decided improvement, here there is a reduction in the infestation. Continued logging of the Red Tops and Sorrel Top trees will if carried on for two more seasons greatly improve this area. It is just as well to remember that there is not one chance in 10,000 of the present infestation in the East Fork District stopping suddenly, it will not do so. Leaving seed trees is not necessary on a Bug area, in fact in our judgment it is a mistake. Where reproduction is assured the sale area should be thoroughly logged.

We are very glad to have the opportunity of making this examination. The cost was as follows:
Edmonston subsistence two days, rate \$1.20, per day \$2.40;
Hofer subsistence expense two days rate \$1.20 per day \$2.40;
Travel by automobile 141 miles at 7¢ per mile \$9.87;
Total expense Edmonston and Hofer \$14.67.

Dated at Kanab, Utah.
August 22, 1923.

W. T. Edmonston,
Entomologist